



# ICAO ENGINE EXHAUST EMISSIONS DATA SHEET

## SUBSONIC ENGINES

ENGINE IDENTIFICATION: CFM56-7B26E BYPASS RATIO: 5.1  
 UNIQUE ID NUMBER: 11CM072 PRESSURE RATIO ( $\pi_{00}$ ): 27.7  
 COMBUSTOR: Tech Insertion  
 ENGINE TYPE: TF RATED THRUST ( $F_{00}$ ) (kN): 117.0

REGULATORY DATA **\*\* DATA SUPERSEDED \*\*** SEE FOLLOWING UID FOR REVISED DATA: **01P11CM116**

| CHARACTERISTIC VALUE:                        | HC   | CO   | NO <sub>x</sub> | SMOKE NUMBER |
|--|------|------|-----------------|--------------|
| D <sub>p</sub> /F <sub>00</sub> (g/kN) or SN | 3.0  | 50.6 | 43.1            | 14.4         |
| AS % OF ORIGINAL LIMIT                       | 15.4 | 42.9 | 45.2            | 63.4         |
| AS % OF CAEP/2 LIMIT (NO <sub>x</sub> )      |      |      | 56.5            |              |
| AS % OF CAEP/4 LIMIT (NO <sub>x</sub> )      |      |      | 68.1            |              |
| AS % OF CAEP/6 LIMIT (NO <sub>x</sub> )      |      |      | 77.3            |              |
| AS % OF CAEP/8 LIMIT (NO <sub>x</sub> )      |      |      | 91.9            |              |

### DATA STATUS

- PRE-REGULATION  
 x CERTIFICATION  
 - REVISED (SEE REMARKS)

### TEST ENGINE STATUS

x NEWLY MANUFACTURED ENGINES  
 x DEDICATED ENGINES TO PRODUCTION STANDARD  
 - OTHER (SEE REMARKS)

### EMISSIONS STATUS

x DATA CORRECTED TO REFERENCE  
 (ANNEX 16 VOLUME II)

### CURRENT ENGINE STATUS

(IN PRODUCTION, IN SERVICE UNLESS OTHERWISE NOTED)  
 - OUT OF PRODUCTION (DATE: - )  
 - OUT OF SERVICE (DATE: - )

### MEASURED DATA

| MODE   | POWER SETTING (%F <sub>00</sub> ) | TIME (minutes) | FUEL FLOW (kg/s) | EMISSIONS INDICES (g/kg) |           |                 | SMOKE NUMBER |
|--|-----------------------------------|----------------|------------------|--------------------------|-----------|-----------------|--------------|
|  |                                   |                |                  | HC                       | CO        | NO <sub>x</sub> |              |
| TAKE-OFF   | 100                               | 0.7            | 1.213            | 0.02                     | 0.20      | 21.79           | 13.1         |
| CLIMB OUT  | 85                                | 2.2            | 0.986            | 0.02                     | 0.16      | 17.08           | 9.8          |
| APPROACH   | 30                                | 4.0            | 0.331            | 0.05                     | 3.07      | 8.93            | 2.1          |
| IDLE   | 7                                 | 26.0           | 0.108            | 1.75                     | 30.94     | 4.27            | 2.1          |
| LTO TOTAL FUEL (kg) or EMISSIONS (g)                               |                                   |                | 429              | 302                      | 5476      | 4762            | -            |
| NUMBER OF ENGINES  |                                   |                |                  | 3                        | 3         | 3               | 3            |
| NUMBER OF TESTS  |                                   |                |                  | 7                        | 7         | 7               | 7            |
| AVERAGE D <sub>p</sub> /F <sub>00</sub> (g/kN) or AVERAGE SN (MAX) |                                   |                |                  | 2.6                      | 46.8      | 40.7            | 13.1         |
| SIGMA (D <sub>p</sub> /F <sub>00</sub> in g/kN, or SN)             |                                   |                |                  | 0.4                      | 2.6       | 1.2             | 4.1          |
| RANGE (D <sub>p</sub> /F <sub>00</sub> in g/kN, or SN)             |                                   |                |                  | 2.18-2.91                | 43.8-48.7 | 39.8-42.1       | 8.4-16.2     |

### ACCESSORY LOADS

POWER EXTRACTION 0 (kW) AT All POWER SETTINGS  
 STAGE BLEED 0 (% CORE FLOW) AT All POWER SETTINGS

### ATMOSPHERIC CONDITIONS

|                      |                |
|----------------------|----------------|
| BAROMETER (kPa)      | 97.6-98.5      |
| TEMPERATURE (K)      | 277-293        |
| ABS HUMIDITY (kg/kg) | 0.0015-0.00628 |

### FUEL

|          |           |
|----------|-----------|
| SPEC     | Jet A     |
| H/C      | 1.92-1.93 |
| AROM (%) | 16.2-17.5 |

MANUFACTURER: CFM International  
 TEST ORGANIZATION: General Electric Company  
 TEST LOCATION: PTO, Ohio  
 TEST DATES: 29/09/2005-23/03/2006

### NO<sub>x</sub> REGULATION PARAGRAPH

|   |                   |
|---|-------------------|
|   | 2.3.2 c) (CAEP/4) |
|   | 2.3.2 d) (CAEP/6) |
| x | 2.3.2 e) (CAEP/8) |

### REMARKS

1. Ref. GE REPORT CR-2097/3
2. Rev. 1 Engine S/N 874-026/01, 778-024/01B, and 892-769/01
3. Ref. GE REPORT CR-900E Rev. 2, July 19, 2010
4. Certification in accordance with Part III, Chapter 2, of Amendment 7 of ICAO Annex 16 Vol. II.
5. NO<sub>x</sub> levels in accordance with Part III, Chapter 2, 2.3.2 e) (CAEP/8)

Compliance with Fuel Venting requirements: x ('x' if complies, 'PR' if pre-regulation, '-' if information is not available)